

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application.

Listing of Claims:

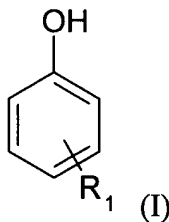
1-30 (Canceled)

31. (New) (New) The beads of a phenolic compound having a high hot solubility of at least 500 g/l at a reference temperature of 90°C, and a large difference of solubility between its hot solubility and cold solubility, i.e. between a first operational temperature being the temperature in a fragmentation apparatus and a second operational temperature the being the temperature of a cooling gas stream, said beads being both attrition resistant and porous.

32. (New) The beads according to claim 31, wherein the phenolic compound has a high hot solubility of at least 1000 g/l at a reference temperature of 90°C and the difference of solubility being at least doubled between the two operational temperatures.

33. (New) The beads according to claim 32, wherein the difference of solubility is a multiple of at least 3 to 5 times between said two operational temperatures.

34. (New) The beads according to claim 31, wherein the phenolic compound has the following formula (I):



wherein:

R₁ represents a hydroxyl group, an amino group, an alkyl group having 1 to 4 carbon atoms or an alkoxy group having 1 to 4 carbon atoms.

35. (New) The beads according to claim 34, wherein the phenolic compound is selected from hydroquinone, pyrocatechin, resorcin or m-aminophenol.

36. (New) The beads according to claim 31, having a size of between 100 μm and 3000 μm in size, optionally between 500 μm and 1500 μm .

37. (New) The beads according to claim 31, having a size, expressed as the median diameter (d_{50}), of from 300 μm to 2000 μm , optionally from 500 μm to 1500 μm .

38. (New) The beads according to claim 31, having an attrition resistance of between 90% and 100%, optionally more than 98%.

39. (New) The beads according to claim 31, having an internal porosity, determined using a mercury porosimeter, of between 0.5 and 0.75 having a bulk density (loose) of at least 0.3 and optionally between 0.4 and 0.5.

41. (New) The beads according to claim 35, having a degree of compressibility of 5% to 10%.

42. (New) The beads according to claim 35, having an attrition resistance of between 90% and 100%, optionally more than 98%.

43. (New) The beads according to claim 35, wherein having an internal porosity, determined using a mercury porosimeter, of between 0.5 and 0.75 cm^3/g .

44. (New) The beads according to claim 35, wherein having good solubility in polymers.

45. (New) A process for preparing the beads defined in claim 31, comprising the steps of:

- a) preparing a hot concentrated aqueous solution of a phenolic compound, then,
- b) fragmenting the solution into droplets and cooling the droplets obtained in a stream of gas so that they solidify into beads, and, then,
- c) the beads obtained in step b) are recovered and dried.

46. (New) The process according to claim 45, wherein step b) consists of passing the phenolic acid solution through a nozzle to form droplets, solidifying the latter by allowing them to fall in a tower with a counter-current of a cold gas, in order to obtain the beads.

47. (New) The process according to claim 46, wherein step a) consists of preparing the aqueous solution of a phenolic compound at a concentration of at least 500 g/l, optionally at least 1000 g/l.

48. (New) The process according to claim 47, wherein the aqueous solution of step a) is at a temperature of between 80°C and 98°C, optionally between 85°C and 95°C.

49. (New) The process according to claim 46, wherein in step b), the nozzle is a single-hole nozzle or a multi-hole nozzle having between 1 and 3000 holes, optionally between 1 and 100 holes.

50. (New) The process according to claim 46, wherein in step b), the nozzle has perforations whose diameter is between 50 and 2000 μm , optionally between 200 and 600 μm .

51. (New) The process according to claim 49, wherein the nozzle is a static nozzle, preferably a nozzle which is subjected to a high frequency electrical vibration system, optionally at 100 to 10000 hertz.

52. (New) The process according to claim 45, wherein in step b), the gas is nitrogen or oxygen-depleted air whose temperature is between -30°C and 30°C, optionally between -10°C and 10°C.

53. (New) The process according to claim 46, wherein the droplet has a residence time for the nozzle outlet to its arrival of between 1 and 10 seconds, optionally between 3 and 5 seconds.

54. (New) The process according to claim 45, wherein in step c), the beads are being recovered using a fluidized bed technique.

55. (New) The process according to claim 45, wherein in step b) the beads are formed in a prilling tower and the beads of phenolic compound at the bottom of the prilling tower is:

10% to 50% by weight of water; and

50% to 90% by weight of phenolic compound.

56. (New) The process according to claim 55, wherein the phenolic compound is hydroquinone and the composition at the bottom of the prilling tower is:

25% to 50% by weight of water;

50% to 75% by weight of phenolic compound.

57. (New) The process according to claim 45, wherein in step c), the beads are subjected to a stream of air the temperature of which is in the range 20°C to 90°C, optionally in the range 60°C to 90°C.

58. (New) The process according to claim 57, wherein drying is carried out using a fluidized bed technique.

59. (New) The process according to claim 58, wherein the beads of phenolic compound after drying is as follows:

0.1% to 1% by weight of water; and

99% to 99.9% by weight of phenolic compound.

60. (New) The process according to claim 59, in which the composition of the beads of phenolic compound after drying is as follows:

0.1% to 0.6% by weight of water;

99.4% to 99.9% by weight of phenolic compound.